FINDING OF NO SIGNIFICANT IMPACT (FONSI)

UPGRADE CORRIDOR AREA FIRE PROTECTION SYSTEM
GRAND CANYON NATIONAL PARK

The National Park Service is proposing to upgrade the existing water distribution system connected to the Transcanyon pipeline to deliver the volume and pressure needed to supply fire sprinkler and standpipe hydrant systems at four sites along the corridor area trails. The project will also install detection and alarm systems, automated sprinkler systems, and an enhanced and expanded standpipe hydrant system with associated equipment to protect several of the most vulnerable structures. The standpipe system upgrade will install new hydrants capable of the required regulatory flow at key locations and includes installation of hose boxes, fire hose, nozzles, and other required equipment. This project is needed to address the following management concerns:

- The current inner canyon fire protection systems are grossly inadequate for life and property protection. The lack of personnel stationed in the corridor severely limits personnel-based fire protection programs.
- Several National Register properties are at risk.
- Present fire alarms consist only of single station, local alarms, and battery powered smoke detectors in overnight use buildings.
- No buildings have functional sprinkler systems. The few standpipe hydrants are poorly located and can provide only a fraction of the water flow needed for fire suppression.
- The existing water distribution system cannot support fire suppression efforts or any additions such as sprinklers or new hydrants.
- The lack of proven fire protection systems place the employees and visitors at an unacceptable level of potential injury or loss of life and property from fire and violates fire codes and OSHA regulations.

In January 2003 the National Park Service (NPS) prepared the *Environmental Assessment (EA) to Upgrade Corridor Area Fire Protection System*. This environmental assessment (EA), in accordance with the National Environmental Policy Act, analyzed the impacts resulting from upgrading fire protection systems at Indian Garden, Phantom Ranch, Cottonwood Camp and Roaring Spring.

PREFERRED ALTERNATIVE

This proposal will greatly diminish the risk of loss of life and property from structural fires by adding fire protection systems to structures at Indian Garden, Phantom Ranch, Cottonwood Camp and Roaring Springs.

Indian Garden - Fire sprinkler systems will be installed in four residences, a bunkhouse, a laundry, two pumphouses, and an historic rock house. Four hose stations will also be constructed. Water for the system will come from the Transcanyon Pipeline. About 200 feet of existing 2-inch waterline will be replaced with new 4-inch pipe. About 50 feet of new 6-inch pipe will be laid to bypass the existing sand trap and allow for backfeeding of water to Phantom Ranch. About 25 feet of new 4-inch waterline and pressure reducing valves will be installed in this modification. In addition to the above, about 300 feet of new 2-inch service connection piping will replace existing ¾-inch line, and 150 feet of new ¾-inch service connection pipe will be added for a total of 725 feet of new piping.

Phantom Ranch - A by-pass around the check valve in the transcanyon pipeline south of Indian Garden at Pipe Creek will be installed. This will allow backfeeding to Phantom Ranch when the transcanyon line is out of service north of Phantom Ranch. The existing distribution system will be replaced with new 6" PVC piping and valves. Fire sprinkler systems will be installed in eight structures, four of which are historic. Thirteen new hose stations will be constructed. The new system will continue to be connected to the transcanyon pipeline. New pipe needed for this element will total 5,215 feet and will include lengths of 6, 2, 1½, and ¾ inch pipe sizes.

Cottonwood Camp - A fire alarm system will be installed in the ranger station/residence (this structure already has a fire suppression system) and a sprinkler system will be installed in the composting toilet and connected to existing water supply. One hose station will be replaced. No new underground pipe will be needed at this site.

Roaring Springs - A stand-alone fire sprinkler system will be installed in the residence/quarters. The fire sprinkler system will be supplied by an exterior 300 gallon water tank pressurized by a nitrogen canister. Fire alarm systems will also be installed in the residence and the pumphouse. No fire sprinkler system is planned for the pumphouse. Two hose stations will be constructed. No new underground pipe will be needed at this site.

The proposal will provide a high level of protection to historic and other structures. Buildings will be protected by wet pipe sprinkler systems supplied from the Transcanyon Pipeline. The new system will provide a sprinkler flow of 0.15 gpm/ ft^2 over a 900 ft^2 area (135 gpm – six heads at 22.5 gpm each covering 150 ft^2) for 30 minutes. Hose hydrants will provide a flow of 100 gpm with 65 psi at the hydrant. The potable water distribution system, including connections to the Transcanyon Pipeline and pressure reduction, will be improved to carry the required flows. The protection system at Phantom Ranch will be improved but somewhat limited when the Transcanyon Pipeline is out of service until the sand trap by-pass valve at Indian Garden and check valve bypass at Pipe Creek are manually opened. Once these valves are opened, there will be full pressure at Phantom Ranch.

Installation of sprinkler systems and related features will be conducted in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties.

MITIGATING MEASURES

The following mitigation has been selected to minimize, reduce or eliminate impacts of the proposed action:

1. Measures will be taken to assure that no surface disturbance or sedimentation should occur in Niobrara ambersnail habitat (Indian Garden). The park biologist will delineate Niobrara ambersnail habitat prior to commencement of construction activities.

2. No construction during the critical breeding period for Mexican spotted owls (February 28 to September 1) will be allowed in areas that might be used by the owls -- Cottonwood Camp and Roaring Spring. No construction in Phantom Ranch during bald eagle wintering season (November through February) if any eagles are present.

3. Conservation measures developed to protect the California condor and Mexican spotted owl will be adhered to during project implementation. This will include confirming distances to the latest known condor nests and Mexican spotted owl protected activity centers and restricting noise related to construction activity when necessary.

4. Personnel conducting the work will be informed to not interact with California condors and to immediately contact the appropriate Park or Peregrine fund personnel when condor(s) occur at the construction site. If a condor occurs at the installation or empty/removal site, activities within 90 meters (300 feet) of the bird will cease until it leaves on its own or until techniques are employed by permitted Park staff or Peregrine Fund personnel which results in the individual condor leaving the area.

5. Construction workers and supervisors will be informed about special status species. Contract provisions will require the cessation of construction activities if a species were discovered in the project area, until park staff re-evaluates the project. This will allow modification of the contract for any protection measures determined necessary to protect the discovery.

6. Installation of sprinkler systems and other appurtenances will be done in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties.

7. If dust becomes a problem during work, sprinkling with water will occur to reduce dust in the construction areas. The park's Air Quality Specialist will be notified of the dates and times of trenching at Indian Garden so air quality data collected at that site can be annotated. Power line to the air quality monitoring station at Indian Garden will be noted and avoided by construction crews.

8. Construction equipment will not idle for long periods to reduce noise and air quality impacts on site.

9. Construction zones will be fenced with construction tape, snow fencing, or some similar material before any construction activity. The fencing will define the construction zone and confine activity to the minimum area required for construction. All protection measures will be clearly stated in the construction specifications and workers will be instructed to avoid conducting activities beyond the construction zone as defined by the construction zone fencing.

10. To minimize soil erosion at the project site, standard erosion control measures including silt fence and sandbags will be incorporated into the action alternative. Any trenching operations will use a rock drill, small excavator, trencher, and/or hand excavation with excavated material side-cast for storage and backfilling. Backfilling and compaction will begin immediately after the lines are placed into the trench and the trench surface will be returned to pre-construction contours. All trenching restoration operations will follow guidelines approved by park staff.

11. If needed, a Revegetation Plan will be developed for the project by a landscape architect or other qualified individual, in coordination with the Park Restoration Biologist. Any revegetation efforts will use site-adapted native species and/or native seed, and Park policies regarding revegetation and site restoration will be incorporated into the plan. The plan would incorporate, among other things, the use of native species, plant salvage potential, exotic vegetation and noxious weeds, and pedestrian barriers.

12. To prevent and minimize the spread of exotic vegetation and noxious weeds, the Revegetation Plan will be followed. The following mitigation measures will be implemented, as included in the plan

- Existing populations of exotic vegetation at the construction site will be treated before construction activities.
- All construction equipment brought in from outside the park will be pressure washed before transport to the construction site.
- The location of the staging areas will be limited to existing disturbed areas.
- All areas disturbed by construction will be revegetated using site-adapted native seed and/or plants if available.
- Post-project exotic plant monitoring should also be conducted in the project area, as time and funding allows.

13. All workers will be informed of the penalties for illegally collecting artifacts or intentionally damaging any archeological or historic property. Workers will also be informed of the correct procedures if previously unknown resources were uncovered during construction activities. Data recovery excavations will be carried out to mitigate adverse affects as outlined in the section on environmental consequences.

14. The NPS has conducted archeological surveys to identify resources in the project area and no archeological sites were discovered. However, archeological monitoring will accompany construction (especially areas where trenching is required) as necessary to ensure avoidance or appropriate treatment of uncovered resources. A Park Service Cultural Resource Specialist will be on site to carry out the monitoring. Should presently unknown archeological resources be discovered during construction, work will stop in that area until the resources are properly evaluated and treatment measures are carried out as necessary in consultation with the Arizona SHPO. In the event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, the NPS will follow provisions outlined in the Native American Graves Protection and Repatriation Act of 1990.

15. Consistent with the *Secretary of Interior's Standards for Rehabilitation* and the historic usage of buildings and structures included in the project, alarm systems and fire suppression sprinkler

heads and pipes will be concealed to the extent practical. These will also be installed in a manner that minimizes loss or disturbance of historic fabric while similarly maintaining the functional livability of occupied or residential interior spaces. To further ensure achievement of these objectives, the contractor selected to install the fire suppression systems will meet on-site with the Park Historical Architect to field verify and approve the pipe routing and configuration, access holes, riser enclosures and the appropriate number and location of sprinkler heads. The contractor will delineate this information on shop drawings approved by the Park Historical Architect.

16. Helicopters flights will be scheduled during the off-peak backcountry season, to minimize disturbance to visitors. The flight path selected for delivery and removal of equipment will be developed so as to minimize the time that the helicopter is in the canyon, i.e. dog-leg flight paths that stay over forested areas the longest, and using direct flights to the sites to minimize noise disturbance in the inner canyon.

17. To minimize the potential for impacts to park visitors, work will be done on only one site at a time. In addition, variations on construction timing will be considered. Options include conducting the majority of the work in the off-season (winter) or shoulder seasons and implementing daily construction activity curfews. Unless additional time is authorized by park management, operation of construction equipment will not occur between the hours of 6 PM to 7 AM in summer (May – September), and 6 PM to 8 AM in the winter (October – April), to minimize the impacts of noise from construction activities to visitors and the Canyon's natural quiet.

18. Inner Canyon Helicopter Regulations, found in Appendix E of the Environmental Assessment, will be adhered to.

ALTERNATIVES CONSIDERED

The environmental assessment evaluated two alternatives: the preferred, described above as the proposal, and a no-action alternative in which existing conditions and management of the areas would continue. The no-action alternative was determined to not meet the objectives of the project and was not in the best interest of the visiting public or preserving historic structures.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is the alternative that would promote the national environmental policy as expressed in the National Environmental Policy Act's Section 101. Generally this means the alternative that causes the least damage to the biological and physical environment. It also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources.

Using selection factors from the Choosing by Advantages process and through the process of internal scoping, scoping with the public and other agencies, the environmentally preferable alternative was determined to be Alternative B, the Preferred Alternative. This alternative best met the purpose and need for action while addressing the six NEPA criteria, overall Park Service objectives and other evaluation factors. No new information came forward from public scoping or consultation with other agencies to necessitate the development of any new alternatives, other than those described and evaluated in the EA.

WHY THE PREFERRED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse. As discussed fully in the EA, the preferred alternative will not affect geology; prime and unique farmlands; wetlands; floodplains; air quality; water quality; cultural resources, minorities or low-income populations or communities; or socioeconomics. The preferred alternative will have negligible, short-term, adverse impact to soils and biotic communities; and moderate, long-term beneficial impacts to visitor experience and park operations. It may affect, but is not likely to adversely affect, the federally listed California condor, Mexican Spotted owl, or bald eagle. It will have no effect on humpback chub or razorback sucker.

After applying the Advisory Council on Historic Preservation's criteria for adverse effects (36 CFR 800.5, Assessment of Adverse Effects), implementation of the preferred alternative will not affect historic resources and a "no historic properties affected" determination has been made.

Degree of effect on public health or safety. The preferred alternative will have a minor, long-term benefit on public safety because it provides fire detection and suppression systems in structures used by the public and park staff.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. As described in the environmental assessment, historic resources, prime farmlands, and wetlands will not be affected. No ecologically critical areas such as wild and scenic rivers will be affected by the preferred alternative. The project sites are not in proposed wilderness.

Degree to which effects on the quality of the human environment are likely to be highly controversial. There were no highly controversial effects identified during either preparation of the environmental assessment or the public review period.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks. There were no highly uncertain, unique or unknown risks identified in the environmental assessment or the public review period.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. The preferred alternative neither establishes a precedent for future actions with significant effect nor represents a decision in principle about a future consideration. Implementation of the preferred alternative will not result in additional future development or a change in use of the corridor area.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Impacts of the preferred alternative identified in the environmental assessment were to soils, biotic communities, visitor experience, and park operations. As described in the environmental assessment, a variety of past, present, and reasonably foreseeable future actions have or may affect resources in the corridor area. However, the adverse impacts of the preferred alternative will be a negligible component of the overall minor cumulative impacts, due to the limited scope of the preferred alternative.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. The project areas were surveyed for archeological resources by park staff. No sites were found in the project areas.

After applying the Advisory Council on Historic Preservation's criteria for adverse effects (36 CFR 800.5, Assessment of Adverse Effects), implementation of the preferred alternative will not affect historic resources and a "no historic properties affected" determination has been made. In addition, the action meets conditions of the 1995 Servicewide Programmatic Agreement between NPS, the National Conference of State Historic Preservation Officers, and the Advisory Council on Historic Preservation for programmatic exclusion for the installation of fire suppression systems.

If previously unknown archeological resources are discovered during construction, all work in the immediate vicinity of the discovery will be halted until the resources are identified and documented. An appropriate mitigation strategy, if necessary, will be developed in consultation with the Arizona State Historic Preservation Office and concerned tribal officials.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat. The preferred alternative may affect but is not likely to adversely affect Mexican spotted owls, California condors, or bald eagles. It will have no effect on humpback chub, razorback sucker or Kanab ambersnail. The incorporation of mitigation measures will minimize the impacts of ecosystem change to habitat. The U.S. Fish and Wildlife Service,

Arizona Field Office, was sent a Biological Assessment according to Section 7 (ESA) consultation procedures and concurred with the NPS determinations.

Whether the action threatens a violation of Federal, state, or local environmental protection law. The preferred alternative violates no federal, state, or local environmental protection laws.

IMPAIRMENT OF PARK RESOURCES OR VALUES

In addition to determining the environmental consequences of the preferred and other alternatives, National Park Service policy (*Management Policies*, 2001) requires analysis of potential effects to determine whether or not actions would impair park resources. The prohibited impairment is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. A major impact to any park resource or value may constitute an impairment.

It has been determined that there will be no impairment of the Grand Canyon National Park's resource or values as a result of this project because there will be no major adverse impacts to a resource or value whose conservation is:

1. necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Grand Canyon National Park;
2. key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
3. identified as a goal in the park's general management plan or other relevant National Park Service planning documents.

PUBLIC INVOLVEMENT

A public scoping letter for the project was sent to a mailing list of approximately 300 people in July 2002. The purpose of the scoping letter was to describe the proposed action to any interested or affected parties and solicit comments from those who may have concerns with the proposed action. Three responses to this scoping effort were received. Two were in favor of the project and one stated a position against it because of concerns that "the project expands the impacts related to development and urbanization into the park."

The environmental assessment was sent to those who indicated a desire to review the document during scoping and was made available for public review and comment during a 30-day period ending May 28, 2003. No comments were received.

CONCLUSION

The preferred alternative does not constitute an action that normally requires preparation of an environmental impact statement (EIS). The preferred alternative will not have a significant effect on the human environment. Negative environmental impacts that could occur are minor and temporary in effect. There are no significant unmitigated adverse impacts on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, or elements of precedence were identified. Implementing the preferred alternative will only result in a long-term, minor, adverse impact or impairment of a key park resource. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the foregoing, it has been determined that the project does not constitute a major federal action significantly affecting the quality of the human environment and an EIS will not required for this project and thus will not be prepared.

Recommended: _____ 6/18/03
Jeffrey Cross — Date
Science Center Director, Grand Canyon National Park

Recommended: _____ 6/26/03
for Joe Alston — Date
Superintendent, Grand Canyon National Park

Approved: _____ 7/7/03
Karen P. Wade — Date
Intermountain Regional Director